Customer No.: 31561
Docket No.: 11761-US-PA
Application No.: 10/707,112

REMARKS

Present Status of the Application

This is a full and timely response to the outstanding non-final Office Action mailed on July 7, 2004. The Office Action has rejected claims 1, 3-5 and 8-10 under 35 U.S.C. 35 102(e) as being anticipated by Perng et al. (US 6,523,494) and claims 4 and 11 under U.S.C. 103(a) as being unpatentable over Perng et al in view of APA.

After carefully considering the remarks set forth in this Office Action and the cited references, it is however strongly believed that the cited references are deficient to adequately teach the claimed features as recited in the presently pending claims. The reasons that motivate the above position of the Applicant are discussed in detail hereafter, upon which reconsideration of the claims is most earnestly solicited.

Discussion of Office Action Rejections

The Office Action rejected claims 1, 3-5 and 8-10 under 35 U.S.C. § 102(e) as being anticipated Perng et al. (USP 6,523,494, Perng hereinafter).

The present invention is directed to a method of forming a passivation layer directly on a metallic, and the metallic layer is prevented from structural or electrical damage due to the deposition process. The present invention teaches in claim 1, among other things, "*performing a plasma-enhanced chemical vapor deposition process to form a first passivation layer directly on the metallic layer, wherein the plasma-enhanced chemical vapor deposition*

process is carried out at a processing pressure between about 21to 25 Torrs and with a processing power between about 1 to 45 Watt". Fabricating a passivation layer with a higher pressure and a lower processing power reduces the degree of damage to the metallic layers. To achieve such an effect, the present invention also teaches in claim 5, among other things, *"performing a semi-atmospheric chemical vapor deposition process with liquid tetra-ethyl-ortho-silicate (TEOS) and ozone inside a reaction chamber to form a first passivation layer directly on the metallic layer, wherein the liquid tetra-ethyl-ortho-silicate flowing into the reaction chamber has a flow rate between 500 sccm to 3000 sccm and the ozone flowing into the reaction chamber has a flow rate between 5000 sccm to 15000 sccm".* Fabricating a passivation layer directly on a metallic layer using semi-atmospheric chemical vapor deposition under the claimed processing condition eliminates the damages that may inflict upon the metallic layer associated with a plasma.

Perng teaches a PECVD process to form a passivation layer 302, wherein the process operates at a pressure of about 1-20 torrs. The Office asserts that the pressure range includes a +/- 10% difference, and thus would have incorporated the pressure of 20-22 torr, which then reads on the claimed pressure range. Applicant respectfully disagrees and believes such a % difference is arbitrary selected and is not properly based. Applicant again contends that the PECVD process of the instant case operates at a pressure condition that is different from and higher than Perng's. Since Perng fails to teach or suggest each element in claim 1, Perng fails to render claim 1 anticipated

Regarding the teaching of a SACVD process, Perng teaches depositing a PECVD layer. The surface of the PECVD layer is then treated with ozone to enhance its surface sensitivity (col 11, ln 19-46, step 406 in Fig. 4). After the surface treatment step, a layer of SACVD silicon oxide is formed over the PECVD layer (step 408). Accordingly, Perng fails to teach "...performing a SACVD process ... to form a first passivation layer directly on the metallic layer...." as taught in claim 5. The Office further asserts that Perng teaches the flow rate conditions for TEOS and ozone in the SACVD process of the instant case in col. 11, ln. 19-25. Applicants respectfully submit to the Office that those flow rate conditions are directed to the surface treatment step rather than the SACVD process for forming the silicon oxide layer. Therefore, not only Perng fails to teach forming a passivation layer directly on the metallic layer with a SACVD process, Perng also fails to teach the specific process conditions for the SACVD process that may eliminate damages to the metallic surface during the deposition process.

For at least the above reasons that Perng fails to teach or suggest each element in the claims, Applicants respectfully assert that claim 5 patentably define over Perng. Since claims 8-11 are dependent claims which further define the invention recited in claim 5, respectively, Applicants respectfully assert that these claims also are in condition for allowance. Thus, reconsideration and withdrawal of this rejection are respectively requested.

The Office Action rejected claims 4, 11 under 35 U.S.C. § 103(a) as being unpatentable over Perng in view of APA.

With regard to the 103 rejections of claims by Perng in view of APA, Applicants respectfully submit that these claims defined over the prior art references for at least the reasons discussed above. If the independent claim 5 is allowable over the cited references, its independent claim 11 is allowable as a matter of law, because this dependent claim contains all features of their respective independent claim 5. As a result, Applicant submits that the dependent claims 8-11 patently define over the cited reference.

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CONCLUSION

For at least the foregoing reasons, it is believed that the presently pending claims 1-5, 8-11 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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